

REMARKS

Upon entry of the present amendment, claims 1-15 will remain pending and stand ready for further action on the merits.

The amendments made herein to the claims do not incorporate new matter into the application as originally filed, and at the same time serve to more particularly and distinctly set forth the invention which the inventors regard as their own. Accordingly, entry of the present amendment is respectfully requested.

Claim Rejections Under 35 USC § 112

Claims 1-15 have been rejected under 35 USC § 112, second paragraph. Reconsideration and withdrawal of this rejection is requested based upon the following considerations.

The applicants have considered the Examiner's comments set forth at item numbers "3." to "9." of the Office Action. In response, Applicants have amended the claims where appropriate in order to appease the Examiner's concerns, and thereby expedite further prosecution of this application. Even so, the following comments are noted for purposes of clarity regarding the amendments made herein.

First, regarding the "wavelength of light" referred to at item "3.c." of the Office Action, it is noted that the "wavelength of

light" usually means a wavelength of a visible light region of "400 to 800 nm" as recited at page 6, lines 16-17 of the specification.

With regard to claim 4, and the use of the term "gas" the same means "air" as described in the specification at page 43, lines 2-5. In this respect, the Examiner's attention is also directed to JIS P-8117 (copy enclosed), which uses air as a gas. An English language version of JIS P-8117 is provided herewith.

Additionally, it is noted that claims 8 and 9 have been amended in accordance with suggestions made by the Examiner in the Office Action.

Further, in claim 11, the phrase "which space may be substituted" has been changed to "which is unsubstituted or substituted", in an effort to overcome the Examiner's prior concerns.

Still further, it is noted that in claim 12, the term "piled" has been changed to "present" in order to alleviate certain concerns of the Examiner.

Finally, it is noted that the term "approximately" in claim 14 is acceptable, and that no change in this language is required to meet the provisions of 35 USC § 112, second paragraph. In this respect, claim 14 as originally presented is fully and completely in accordance with the provisions of 35 USC § 112, second paragraph.

Based upon the above considerations, the Examiner is respectfully requested to withdraw all outstanding rejections under 35 USC § 112, second paragraph.

Claim Rejections Under 35 USC § 102/103

Claims 1-5 and 7-10 have been rejected under 35 USC § 102(b) as being anticipated by Yoshinaga et al. (EP 0843197 A2). Further, claims 1-3, 6-8, 10 and 12-15 have been rejected under 35 USC § 102(b) as being anticipated by Larson (US 5,751,388). Still further, claim 9 has been rejected under 35 USC § 103(a) over Larson (US '388) in view of Hirai et al. (US 5,103,327). Reconsideration and withdrawal of each of these rejections are respectfully requested based upon the following considerations.

The Present Invention and Its Advantages

The present invention provides an anisotropic scattering film comprising a micro-porous film and a substance filled in micropores of said micro-porous film as recited in claim 1. The anisotropic scattering film has high transmittance and excellent scattering property.

Distinctions over the Cited Art

Yoshinaga et al. (EP 0843197 A2)

The Examiner states that Yoshinaga et al. teaches a liquid crystal device comprising a microporous polymer film and a substance (low molecular weight mesomorphic compound) in the micropores of the film, wherein the micropores are elliptical in form so that the ratio of the major axis to the minor axis of the ellipse is over 1, since the ratio of 1 would be that of a circle (spheroids). The minor axis size of the ellipse is 0.1 to 10 microns (diameter of a shorter axis of the spheroid) (see column 4, lines 25-60 and column 5, lines 1-5) and would be smaller than the wavelengths of light greater than 0.1 to 10 microns.

The porous film of Yoshinaga is used as being disposed between a pair of electrode plates. Transmission and scattering of incident light into the porous film is controlled by switching applied voltage. On the contrary, the anisotropic scattering film of the present invention is used as it is without switching of applied voltage. The film of the present invention is clearly different from the porous film of Yoshinaga et al. in the principle of operation.

Furthermore, differences between Yoshinaga et al. and the present invention are explained below.

In the present invention, a porous film having a void fraction (porosity) of 30-85% is used.

On the other hand, the porous film of Yoshinaga et al. needs a higher porosity of 80-98% because it requires ON-OFF of applied voltage in order to change the orientation of filling substances in the pores.

Meanwhile, the Examiner states that Yoshinaga et al. teaches that the polymer film is polypropylene with a 90% porosity impregnated with liquid crystal, but the porosity now becomes outside the amended claim of the present invention.

In the film of the present invention, micropores have ellipse form, and the minor axis size of the ellipse is less than the wavelength of light, and the major axis of the ellipse is equal to or more than the wavelength of light. Here, the wavelength of light usually means a wavelength in a visible light region, that is 400nm to 800nm. (Specification page 6, lines 7-17). More specifically, the minor axis size is less than 400nm, and major axis size is 400nm or more. By this, an anisotropic scattering film having high transmittance and excellent scattering property can be obtained.

Yoshinaga et al. describes that: a diameter of the dispersed low-molecular weight mesomorphic compound may preferably be 0.1 - 10 microns (see page 4, lines 56-58); and the low-molecular weight

mesomorphic compound is dispersed therein in any shapes including spheres or spheroids or further irregularly elongated shapes like bars (see page 4, lines 55-56). Yoshinaga et al. teaches that a broad range of pore diameter can be used and any shapes of pores can be used, but does not teach specifically the minor axis size of ellipse form less than the wavelength of light.

Larson (US 5,751,388)

Larson teaches a polarization-sensitive scattering element (PSSE) which has a uniaxial homogeneously-aligned PDLc (polymer dispersed liquid crystal) structure, by utilizing phase separation (column 6, lines 22-31). The film of Larson is clearly different from the light scattering film of the present invention which uses a film having a void fraction of 30-85%. Moreover, Larson is completely silent about the amount of the dispersed droplets in the matrix film and the diameter.

Hirai et al. (US 5,103,327)

The USPTO relies upon Hirai et al. to cure deficiencies in the cited Larson et al. reference with respect to rendering obvious claim 9. However, as indicated above, Larson is quite distinct from the present invention, and as such it is submitted that relying upon the secondary reference of Hirai et al. does not cure

the deficiencies of the Larson reference. Further, even upon combining the two disclosures of Larson and Hirai et al., one would in no way be motivated to arrive at the instant invention recited in claim 9.

Tsubata et al. (US 5,762,825)

With regard to claim 11, the Examiner has also relied upon the secondary reference of Tsubata et al. in combination with the primary reference of Larson to support an obviousness rejection of the claims. However, as noted above, Larson is quite distinct from the present invention as claimed, so that even upon combining the disclosure of the secondary cited reference of Tsubata et al., one of ordinary skill in the art would in no way be motivated to arrive at the instant invention of claim 11. Absent such motivation in the cited art, the Examiner's outstanding rejection cannot be sustained.

Additional Comments

No motivation is provided in the cited art, which would allow one of ordinary skill in the art to arrive at the present invention as claimed. This is true whether one considers the references of Yoshinaga et al., Larson, Hirai et al. or Tsubata et al., either alone or in combination. Accordingly, it follows that the cited

references of record completely fail to anticipate or render obvious the instant invention as claimed.

CONCLUSION

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 1-15 are allowed and patentable under the provisions of Title 35 of the United States Code.

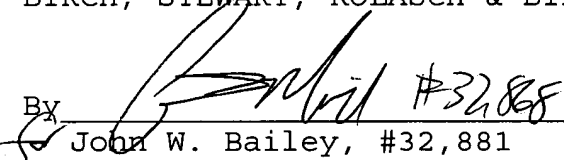
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Appl. No. 09/907,903

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Enclosure: English language version of JIS P-8117